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RUEHBJ/AMEMBASSY BEIJING 1198

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RUEHUL/AMEMBASSY SEOUL 0859

RHMFISS/DEPT OF ENERGY WASHINGTON DC

RUCPDOC/DEPT OF COMMERCE WASHINGTON DC

RUEATRS/DEPT OF TREASURY WASHINGTON DC

RUEAAIA/CIA WASHDC

RHEFAAA/DIA WASHDC

RHEHNSC/NSC WASHDC 1385

RUEKJCS/SECDEF WASHINGTON DC

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SUBJECT: POWERING AFGHANISTAN: CONSIDERING THE CONTRIBUTION OF CENTRAL ASIA TO STABILITY AND GROWTH

REF: (A) ASTANA 0251  
(B) ASTANA 0419

ASTANA 00001373 001.2 OF 005

¶1. (U) Sensitive but unclassified. Not for public Internet.

¶2. (SBU) SUMMARY: Reliable, affordable electricity is vitally important to Afghanistan's economic growth, prosperity, and stability. Donors are investing substantial resources in Afghanistan to build a power transmission and distribution infrastructure. Using this infrastructure to satisfy demand remains a challenge and a substantial increase in supply is required. Options include building new generation in Afghanistan to exploit viable natural gas, coal, and hydroelectric potential, but Afghanistan-based generation will likely be insufficient, especially in the near-term, to satisfy demand. Central Asia appears to represent a viable near-term option to supply Afghanistan.

¶3. (SBU) In the long-term, Central Asian power should enjoy a cost-competitive position for exports to Afghanistan, and possibly other South Asian markets. There are challenges to realizing this potential. USAID advisors in Central Asia believe that USG emphasis on accelerated development of the CASA-1000 project to bring Tajikistan and Kyrgyzstan generation to Afghanistan and Pakistan exacerbates these challenges, and is based on inadequate analysis of the financial viability and political risk of the project. A thorough analysis is accessible via OpenNet at the following address:

[http://intranetcar.ee.usaid.gov/Home/Almaty-Offices/Economic-Growth/Resources---Li\\_nks/Powering-Afghanistan---The-Contribution-of-Central.aspx](http://intranetcar.ee.usaid.gov/Home/Almaty-Offices/Economic-Growth/Resources---Li_nks/Powering-Afghanistan---The-Contribution-of-Central.aspx).

END SUMMARY.

AFGHANISTAN'S POWER SECTOR INFRASTRUCTURE

¶4. (SBU) Afghanistan lacks sufficient domestic generation capacity to meet demand, and relies on limited (and subsidized) imports from Turkmenistan, Uzbekistan, and Tajikistan, and on costly donor-funded diesel generation plants. Only about a third of households in Kabul enjoy electricity service. Service in other urban areas is less common, while electricity service in rural areas is virtually unknown. The Afghanistan and U.S. governments, multi-lateral development banks, and other donors put a high priority on developing the power sector. Electricity generated or imported has increased from 500 million kilowatt hours (kWh) in 2004 to 1.57 billion kWh in 2008 and the number of electricity customers has increased by almost 280% in the last six years.

¶5. (SBU) A major obstacle to expanding coverage is the poor financial performance of Afghanistan's nascent power institutions. To ensure long-term sustainability, the U.S. Government is working with the Afghanistan Government to improve the sector's commercial performance and build the capacity of Afghans to govern, manage, and maintain their electricity systems. The U.S. Government is assisting in expanding domestic generation. When these projects are completed, the total grid-connected installed capacity in Afghanistan should exceed 500 MW, still far short of the estimated 1000 MW potential demand that an expanded and reinforced Afghanistan North East Power System (NEPS) might serve.

#### POWER FROM UZBEKISTAN

¶6. (SBU) Turkmenistan, Uzbekistan, and Tajikistan have stated their willingness to promote stability in Afghanistan by supplying electrical power. Uzbekistan has considerable potential to supply Afghanistan with relatively low-cost power, drawing on its substantial natural gas reserves. Uzbekistan has agreed to supply up to 70 MW to cover Mazar-e-Sharif and parts of Kabul. The recent completion of a single-circuit 220 kV interconnection enables

ASTANA 00001373 002.2 OF 005

Uzbekistan to expand the supply to 150 MW. A second 220 kV interconnection will double this transmission capacity.

#### POWER FROM TURKMENISTAN

¶7. (SBU) Turkmenistan's potential to provide electric power to Afghanistan relies on its abundant reserves of natural gas. Current supplies to Afghanistan are limited, via a 110 kV line supplying approximately 25 MW to Herat. Turkmenistan and Afghanistan, with U.S. Government help are discussing a new dedicated 500 kV line to connect Turkmenistan generation to NEPS at Andkhoy, with a potential initial supply of up to 300 MW from a new gas-fired plant. The discussions are still at the exploratory stage, however, and have not yet included a discussion of price.

#### POWER FROM TAJIKISTAN

¶8. (SBU) Tajikistan has enormous potential for hydroelectric generation, with about 4000 MW installed, and moderate new capacity under development. Tajikistan also has some coal-fired generation potential. Tajikistan currently endures winter shortages and forced rationing, however, due to a combination of seasonal fluctuation in hydroelectric power availability, the significant load represented by TALCO, the country's Soviet-legacy aluminum smelter, and its reliance on erratic power supplies from neighboring Central Asian countries during peak winter demand. Despite its potential, new capacity development in Tajikistan is constrained by financing uncertainties and regional water-sharing disputes, with downstream Uzbekistan strongly opposed to new large hydroelectric development that doesn't consider its water-security concerns.

#### POWER FROM KYRGYZSTAN

¶9. (SBU) Kyrgyzstan's energy endowments are similar to Tajikistan's. Kyrgyzstan also has viable coal deposits. Like Tajikistan, Kyrgyzstan suffers from severe winter power deficits. New hydro-electric development in Kyrgyzstan faces similar challenges to those in Tajikistan.

## POWER FROM KAZAKHSTAN

**¶10.** (SBU) Kazakhstan possesses approximately 17,000 GW of installed capacity, the majority of which is lignite-fired and located in Kazakhstan's north. Remaining thermal generation capacities in the south rely on rail deliveries of Kazakhstan lignite. Domestic generation capacity in Kazakhstan's southern districts is insufficient to meet the demands of its largest load centers. Kazakhstan imports power from Kyrgyzstan, and relies on limited volumes of power that can be delivered from northern Kazakhstan via the 500 kV line connecting northern Kazakhstan generation capacities with the Central Asian Power Grid (CAPG) via Almaty.

## CASA-1000 - PROS AND CONS

**¶11.** (SBU) CASA-1000 is envisaged as the first phase in a prospective "Central Asia - South Asia Regional Electricity Market", or CASAREM, in which Central Asia would supply power to South Asian markets, including Afghanistan. CASA-1000 would link Tajikistan with northern Pakistan via a 500 kV DC transmission line, with the capacity to transmit up to 1000 MW of power from Central Asia to Peshawar via Afghanistan. The Afghanistan power system would draw up to 300 MW at an intermediate point along the line via a DC to AC converter station. Power would be supplied during periods of generation surpluses in Tajikistan and Kyrgyzstan.

## THE CASE FOR CASA

**¶12.** (SBU) Proponents of CASA-1000 argue it would provide Tajikistan and Kyrgyzstan with higher revenues from hydroelectric generation than they currently earn under existing arrangements for power sales within Central Asia. CASA-1000 thus would stimulate investment in

ASTANA 00001373 003.2 OF 005

Central Asian generation.

## UNDERMINED BY UNREALISTIC ASSUMPTIONS

**¶13.** (SBU) However, USAID's Central Asia advisors believe the CASA-1000 project makes a number of unrealistic assumptions, including the following: (1) that Pakistan is a credible market for Central Asian power that the CASA-1000 line would deliver; (2) that the CASA-1000 line's security can be reliably assured; and (3) that Kyrgyzstan and Tajikistan will be able to supply at least 2 TWh and 3 TWh per year, respectively.

## MARKET AND PAYMENT RISK

**¶14.** (SBU) The ability of Afghanistan's power companies, and their customers, to pay the full cost of consumed power is currently very limited. Based on discussions USAID advisors have held with power-sector representatives in Central Asia, concern for the prospect of non-payment by Afghanistan is significant, is likely to constrain investment in new plants and would jeopardize the dispatch of power to Afghanistan if large arrearages accumulated. Pakistan has a total installed capacity of about 16,000 MW, of which about 6,000 MW is operated by Independent Power Producers (IPPs). In March, local trade press reported Pakistan's single-buyer wholesale customer for IPP-produced power had arrearages to Pakistan's IPPs of over \$2 billion, despite the IPPs' low contract price of about \$0.05/kWh, according to Pakistan's Water and Power Development Authority. Pakistan's IPPs have begun taking generation off-line in response.

**¶15.** (SBU) Since the market in Central Asia, especially Kazakhstan, is supply constrained, it is likely that Kyrgyzstan and Tajikistan would seek a price beyond the ability of CASA-1000 and the Pakistan market to pay. Kyrgyzstan sells summer electricity to Kazakhstan at \$0.046/kWh as part of their annual water release agreement. We can expect that Tajikistan will seek to export its power on similar terms. Given the financial crisis in the Pakistan power sector and the cost of exporting Kyrgyzstan or Tajikistan power via CASA-1000, investment in infrastructure that relied on a paying Pakistan buyer would seem imprudent, if based solely on commercial considerations.

## PHYSICAL SECURITY RISK

¶16. (SBU) The risk of sabotage against power infrastructure in Afghanistan appears likely to remain for the foreseeable future. As against market or payment risks, financial guarantees will be required to satisfy would-be investors in any commercially structured supply arrangement. The proposed CASA-1000 line would traverse very inhospitable territory, with its Pakistan terminus in the Federally Administered Tribal Areas near Peshawar. The physical security of a high-voltage transmission line stretching several hundred kilometers would be very difficult to ensure. This risk would deter investment based on commercial considerations, or result in high costs and the need for complicated and costly insurance.

¶17. (SBU) CASA-1000's initial financial models assumed that Kyrgyzstan and Tajikistan would have sufficient surplus capacity to provide power to energize the CASA-1000 line and supply up to a combined 5 TWh per year, during peak summer months. USAID and World Bank advisors have independently concluded that such supply estimates are based on optimistic assumptions. If Kyrgyzstan and Tajikistan together are unable to provide a combined 5 TWh per year for export via CASA-1000, the economic viability of the project becomes very questionable, as fixed transmission costs would raise the unit-cost of power delivered.

#### INTERCONNECTION WITH CENTRAL ASIAN TRANSMISSION

¶18. (SBU) The expansion of power supplies from Central Asia to Afghanistan will entail the interconnection of NEPS with high-voltage transmission infrastructures in Turkmenistan,

ASTANA 00001373 004.2 OF 005

Uzbekistan, and Tajikistan. The practical difficulties of interconnection will increase as the volume of power exported from Central Asia to Afghanistan increases.

¶19. (SBU) Currently, Turkmenistan, Uzbekistan, and Tajikistan provide power to Afghanistan on what is known as an "island" basis. With current limited volumes, the potential impact of an Afghanistan network fault on the stability of the exporting countries' systems is negligible. However, as load increases with the completion of high-voltage 220 kV interconnections, Afghanistan system reliability becomes increasingly important.

#### POLITICAL RISK

¶20. (SBU) Power exports to Afghanistan from Turkmenistan and Uzbekistan appear to entail no substantial domestic political risk, as the two exporting countries do not currently endure domestic supply shortages. Moreover, both appear prepared and able to increase generation capacity to expand exports to Afghanistan. Unfortunately, the same cannot be said for Kyrgyzstan and Tajikistan. Neither country currently satisfies its own domestic load requirements year-round, and the prospects for significant capacity expansion in both countries remains remote for the foreseeable future. The political risks to the delivery of Kyrgyzstan and Tajikistan power to Afghanistan would be amplified under a CASA-1000 scenario. Assuming the project's economic assumptions are correct, Pakistan and Afghanistan would most likely capture all of Kyrgyzstan's and Tajikistan's surplus hydroelectric power. In addition to the likely increasing of rationing in these countries, it might precipitate a decision by Kazakhstan to disconnect from the CAPG, with repercussions for regional cooperation. Meanwhile, CASA-1000 would create conditions to expand hydroelectric capacities in Kyrgyzstan and Tajikistan. Uzbekistan has vehemently opposed such investment, and government officials have told USAID that they have strong reservations about the CASA-1000 proposal for this reason, among others.

#### THE RISKS OF CASA-1000 OUTWEIGH THE REWARDS

¶21. (SBU) Enthusiasm for CASA-1000 appears to be waning among many involved in the project. The Asian Development Bank withdrew its financial backing for the project earlier this year, ostensibly due to financing constraints and competing ADB priorities. In internal ADB correspondence seen by USAID, however, ADB staff echoed many of the concerns outlined above. USAID understands the World Bank is

conducting its own due diligence of the CASA-1000 project. In April, Pakistan's cabinet vetoed the Inter Governmental Agreement on CASA-1000 pending a comprehensive presentation of the project's viability by its sponsors.

#### CONCLUSIONS AND RECOMMENDATIONS

¶22. (SBU) We recommend pursuing diversified options to expand power exports from Central Asia to Afghanistan. Simultaneously, the United States government should emphasize domestic industry development in Afghanistan (including commercialization), and support sector reform and development in Central Asia to facilitate expanded trade in Central Asia and with Afghanistan and beyond. Expanded trade between Central Asia and South Asia, including Pakistan, could at that point be developed with a significantly lower risk profile and a more certain and sustainable future.

#### THE COSTS OF CASA-1000

¶23. (SBU) We recommend that the United States reconsider support for the CASA-1000 project, pending a clear demonstration of its financial viability. Further, we recommend that the U.S. government consider the opportunity cost of pursuing CASA-1000, in terms of alternative investments in options to supply power to Afghanistan, the relative timeliness of delivery of such supply, and the potential regional political and geostrategic repercussions that

ASTANA 00001373 005.2 OF 005

CASA-1000 would have. Where mitigation of power-supply constraints in Pakistan is of concern, we recommend that alternative options for supply be compared with and evaluated against CASA-1000. Continued pursuit of CASA-1000 would appear to jeopardize constructive engagement with Uzbekistan to resolve Afghanistan's power supply deficit. Uzbekistan's immediate support and commitment are more important to Afghanistan's energy security than the potential future benefits of the CASA-1000 project.

#### THE VIABILITY OF AFGHANISTAN'S POWER SECTOR

¶24. (SBU) Regardless of the source of power, the key issue is the financial sustainability of the Afghanistan power sector. U.S. efforts should continue to emphasize putting the Afghanistan power sector on a solid footing, ensuring that the sector's revenues are sufficient to cover its costs, and creating the institutional arrangements necessary for the sector's sustainability as donor assistance declines. Assistance should include support for new capital investments, institutionalization of commercially-oriented management practices operating companies, and appropriate tariff policies combined with effective subsidy mechanisms for the vulnerable. Until domestically-generated revenues are sufficient, donor-funded fiscal support to the sector will remain necessary to cover commercially-procured power.

#### SUPPORTING REGIONAL TRADE IN ELECTRICAL POWER

¶25. (SBU) The power systems of Uzbekistan, Tajikistan, Kyrgyzstan, and Kazakhstan are inter-connected via the CAPG. However, this physical interconnection is not supported by a robust institutional framework governing the trade in electric power. The USG should support existing initiatives to establish a regional power market with enhanced system dispatch efficiency and the transparent and non-discriminatory allocation of transmission capacities in the CAPG. This should be matched by efforts to resolve regional water disputes. The emerging framework will make more power generated within the region available to Afghanistan and enhance the investment environment for new generation.

¶26. (SBU) Embassies Ashgabat, Astana, Dushanbe, Kabul, and Tashkent have cleared this cable. Embassy Bishkek did not clear, but does not object to this cable's transmission.

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